IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : John Chrisitan Hermansen et al.   Art Unit : 2172
Serial No. : 09/275,766   Examiner : Joon H. Hwang
Filed   : March 25, 1999
Title   : SYSTEM AND METHOD FOR ADAPTIVE MUTLI-CULTURAL SEARCHING
             AND MATCHING OF PERSONAL NAMES

Commissioner for Patents
P.O. Box 1450
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DECLARATION OF JOHN CHRISTIAN HERMANSEN

This declaration relates to the following systems: Arabic Name Classifier ("ANC"),
Arabic Name Analyzer ("ANA"), Consular Lookout And Support System ("CLASS"), and
Distributed Name Check ("DNC").

ANC

To the best of Declarant's recollection, ANC was written as a design document and
delivered to a customer no later than the end of 1996.

ANC accepted a romanized input name and a COB associated with the input name, and
produced a binary result indicating whether the input name was considered to be Arabic.
Specifically, ANC determined a single surname for the input name, and compared that surname
against a list of surnames that were known both to be from the COB and to be Arabic. If there
was an exact spelling match, then ANC determined that the input name was Arabic and reported
this determination to a user. If there was not an exact match, then ANC (i) performed a digram
analysis on the input surname to determine the digrams present, (ii) produced an indicator of the
similarity between the digram analysis and digram results for Arabic surnames from the COB,
(iii) compared the value of the indicator to a threshold value representing confidence in the
similarity and, based on this comparison, produced a binary result indicating whether the input
name was considered to be Arabic, and (iv) reported the binary result to a user.

ANA

To the best of Declarant's recollection, ANA was written as a design document and
delivered to a customer no later than the end of 1996. ANA accepted a romanized input name

known to be Arabic, and applied various modification rules to a single surname of the input name. The rules were based on known spelling differences in Arabic surnames, and application of the rules produced a resulting surname which could be different from the surname of the input name. ANA then produced a key representing the resulting surname, and the key could be used to pull names from a database.

CLASS

To the best of Declarant's recollection, no later than the end of 1991 (i) according to the terms of a contract with the United States government, and for compensation, Language Analysis Systems provided a design to the United States government in the United States of America proposing linguistics processing features for CLASS, (ii) according to the terms of a contract between another party (not Language Analysis Systems) and the United States government, and for compensation, CLASS was implemented in software by the other party, with the implementation generally following the proposed design from Language Analysis Systems, and CLASS was provided to the United States government in the United States of America, and (iii) CLASS was operated on a mainframe in the United States of America and accessed by terminals in one or more foreign countries.

CLASS accepted an input name and determined a rank-ordered list of names from a database, where the names in the list were considered to be possible matches for the input name. More specifically, CLASS:

(1) received the input name and various related or corresponding inputs including one or more "compressed name" ("CN") key(s) for corresponding surname(s), a corresponding COB, a corresponding date of birth ("DOB"), and possibly a corresponding state of birth,

(2) identified component elements of the input name (e.g., surname and given name), and identified a first initial of the given name,

(3) identified digrams within each separate component element of the input name ("input name digrams"),

(4) derived a set of names from within a database for comparison to the input name, the set of names being derived based on the input name, the one or more CN keys, the DOB, and the first initial of the given name,

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(5) identified digrams for the component elements of the names in the set of names ("database name digrams"),

(6) selected a set of weighting rules for producing a score indicating the extent to which two names matched each other, the set of weighting rules being selected based on the COB of the input name,

(7) compared the input name with each name in the set of names, the comparison including comparing the input name digrams to the database name digrams,

(8) generated a metric for each name in the set of names by applying the set of weighting rules during the comparison of the input name with each name in the set of names,

(9) rank-ordered all names in the set of names having a metric greater than a threshold score, the threshold score indicating that the input name matches a particular name from the set of names, and

(10) provided the rank-ordered names to the user.

The set of weighting rules assigned various points to a particular name in the set of names based on a comparison of the particular name and the input name. For example, various points might be assigned depending on whether (i) corresponding element(s) in the particular name and the input name had similar digram results, (ii) the length of one or more elements was the same in the particular name and the input name, (iii) the DOBs of the particular name and the input name were within a predetermined timeframe of each other, (iv) the COB of the input name was the same as the COB associated with the particular name, (v) the elements of the particular name and the input name were in the same order, and (vi) the state of birth was the same for both the particular name and the input name.

DNC

To the best of Declarant's recollection, no later than February 1997 (i) according to the terms of a contract with the United States government and for compensation, DNC was developed by Language Analysis Systems as a computer program and delivered by Language Analysis Systems to the United States government in the United States of America, and (ii) DNC was operated in one or more foreign countries. DNC was similar to CLASS, as described above, except that (i) DNC did not receive or use a key for the surname(s) of the input name, (ii) DNC

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derived the set of names based on the DOB, the COB, and the state of birth (if available), and without reference to a key or the first initial of the given name, and (iii) DNC ran on a personal computer and not on a mainframe, so that when operated in a foreign country DNC only ran on a personal computer in the foreign country and not on a mainframe in the United States of America.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issued thereon.

Respectfully submitted,

Date: July 9, 2004

John Christian Hermansen

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